

www.apexvs.com

Algebra II semester 1

Algebra Advanced 2 s1

Unit 1 Pretest

Take your time and do your best. If you score 80% or above on any section of the pretest, you will get that grade for the quizzes in that section automatically.

1.1

1/8/14

What is the general equation of a line
and what do the different parts mean?

1.1

$$y = mx + b$$

1/8/14

What happens when you change m?



$$y = 3x$$

$$y = \frac{1}{2}x$$

What happens when you change b?

$$y = 2x + 4$$

$$y = 2x - 1$$



Which equation has the least steep graph?  

A. $y = -8x + 1$

B. $y = \frac{1}{2}x$

C. $y = -\frac{3}{4}x - 6$

D. $y = 3x$

Which of the following are the effects of changing the graph of $y = 4x + 1$ to $y = -5x - 2$? Check all that apply.  

- A. The graph is shifted down by 3 units.
- B. The graph is less steep.
- C. The graph now goes down as it is graphed from left to right.
- D. The graph is steeper.

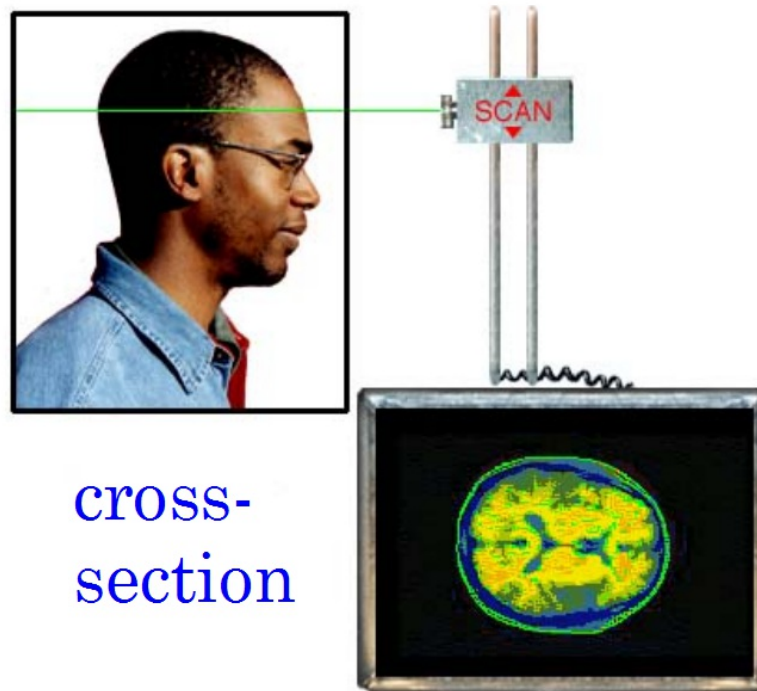
IWBAT describe or visually identify how the intersection of a plane and right circular cone forms a circle, ellipse, hyperbola, or parabola. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

1.1

1/8/14

What is a conic section?

It is a cross-section of a right circular cone.

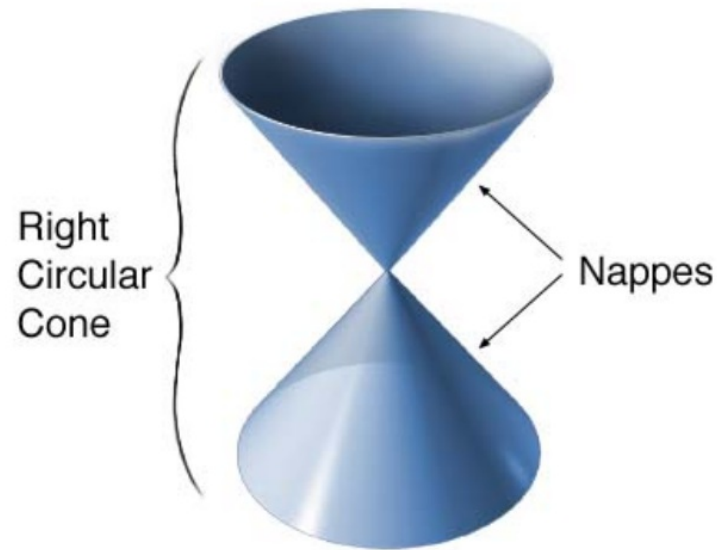


IWBAT describe or visually identify how the intersection of a plane and right circular cone forms a circle, ellipse, hyperbola, or parabola.

1.1

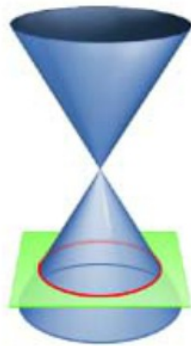
1/8/14

What is a right circular cone?

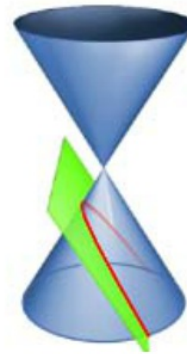


IWBAT describe or visually identify how the intersection of a plane and right circular cone forms a circle, ellipse, hyperbola, or parabola.

Circle



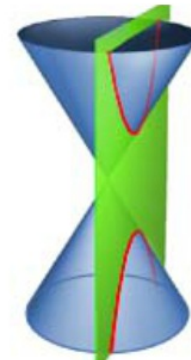
Parabola



Ellipse

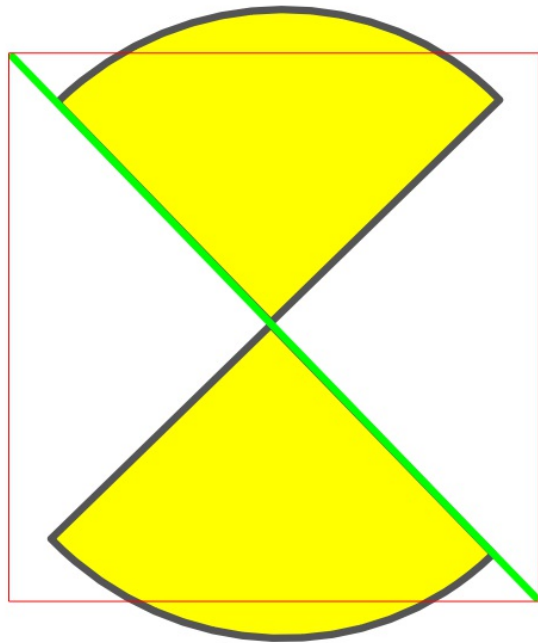


Hyperbola

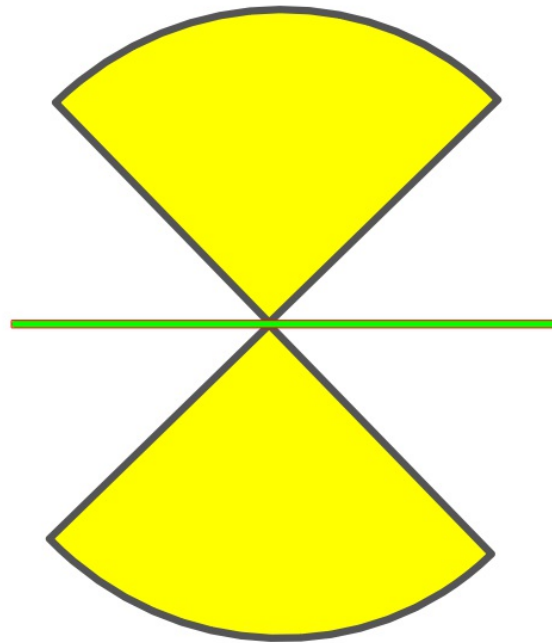


IWBAT describe or visually identify how the intersection of a plane and right circular cone forms a circle, ellipse, hyperbola, or parabola.

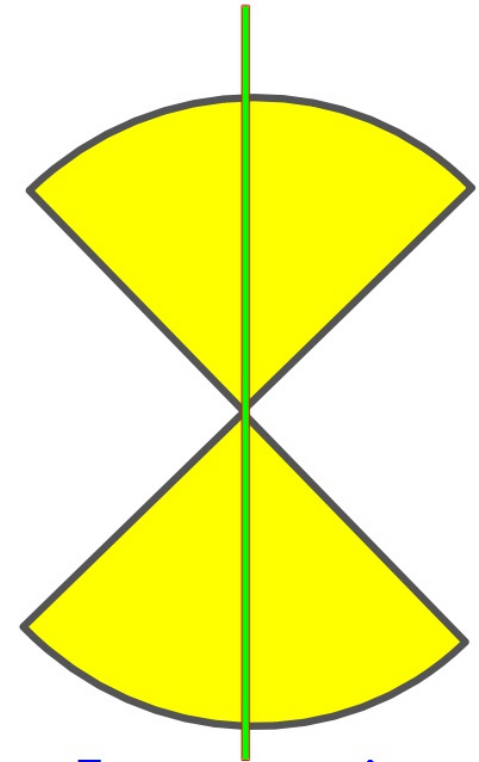
Non-curved conic sections



Line



Point

Intersecting
lines

IWBAT describe or visually identify how the intersection of a plane and right circular cone forms a circle, ellipse, hyperbola, or parabola.

1.1

1/8/14

Complete quizzes 1.1.3 & 1.1.4.

1.2 Describe the three conic sections defined by the intersection of a plane and the vertex of a right circular cone. 1/9/14

1.2

Define a circle and identify its center and radius.

1/9/14

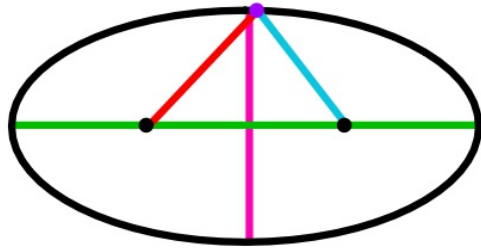
IWBAT define ellipse, hyperbola, and parabola; describe the relationships among an ellipse's foci, axes, and points; a hyperbola's foci, transverse axis, asymptotes, and vertices; and a parabola's focus, directrix, and points.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

1.2

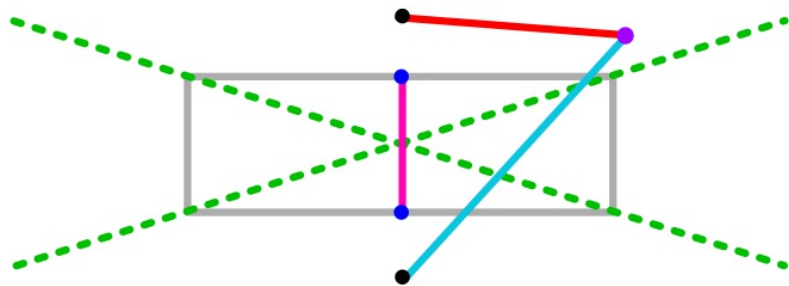
Define an ellipse.

1/9/14



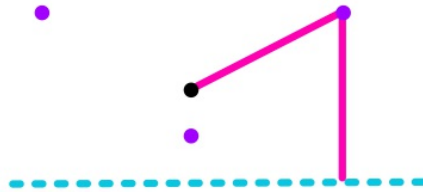
An ellipse is a set of points whose **Distance** from the two **Foci** *sum* to a constant. The foci are always located along the **Major axis**. The **Minor axis** is located half-way between the foci and is perpendicular to the major axis.

IWBAT define ellipse, hyperbola, and parabola; describe the relationships among an ellipse's foci, axes, and points; a hyperbola's foci, transverse axis, asymptotes, and vertices; and a parabola's focus, directrix, and points.



A set of points, the *difference* in the distances between them and each focus is a constant. This constant is equal to the length of the **transverse axis**. The points approach, but never touch the asymptotes.

IWBAT define ellipse, hyperbola, and parabola; describe the relationships among an ellipse's foci, axes, and points; a hyperbola's foci, transverse axis, asymptotes, and vertices; and a parabola's focus, directrix, and points.



A set of points, the distance from each to the focus is *equal* to the distance from each to a line called the **directrix**.

IWBAT define ellipse, hyperbola, and parabola; describe the relationships among an ellipse's foci, axes, and points; a hyperbola's foci, transverse axis, asymptotes, and vertices; and a parabola's focus, directrix, and points.

1.2

1/9/14

Complete quizzes 1.2.3 & 1.2.4.

1/10/14

Describe the conic sections defined by the intersection of a plane and one nappe of a right circular cone.

**Describe an ellipse, a hyperbola,
and a parabola.**

1/10/14

1.3 What are the seven conic sections formed by the intersection of a plane and a right circular cone? 1/13/14

1.3

What do we know about circles?

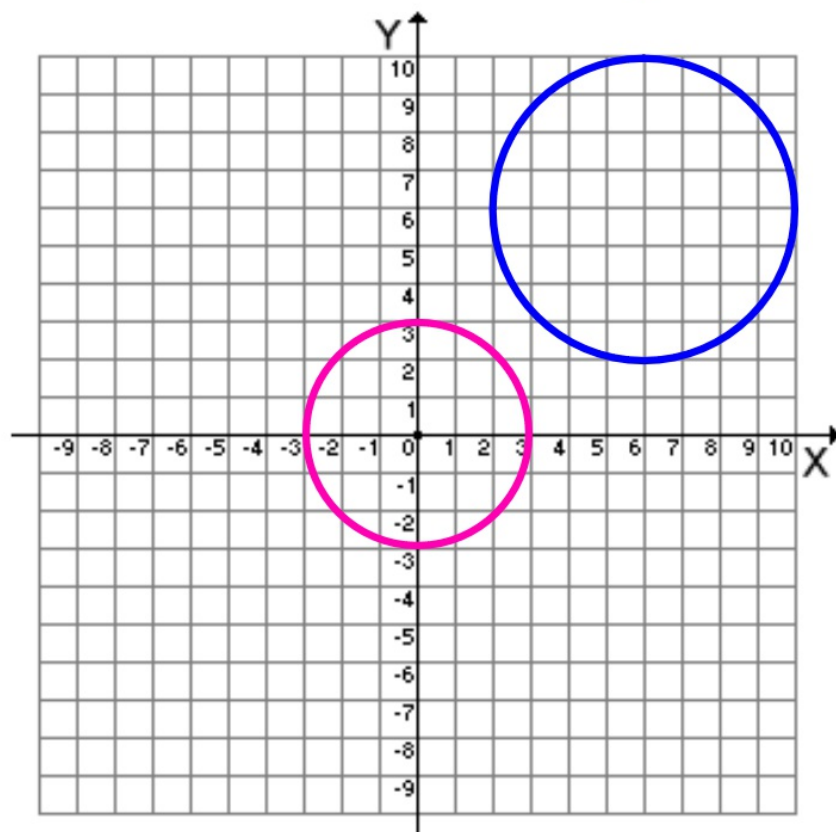
1/13/14

IWBAT identify the standard equation of a circle centered anywhere on the xy-plane, identify the equation of a circle given its radius, and determine the radius of a circle given the equation.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

1.3

The equation of a circle



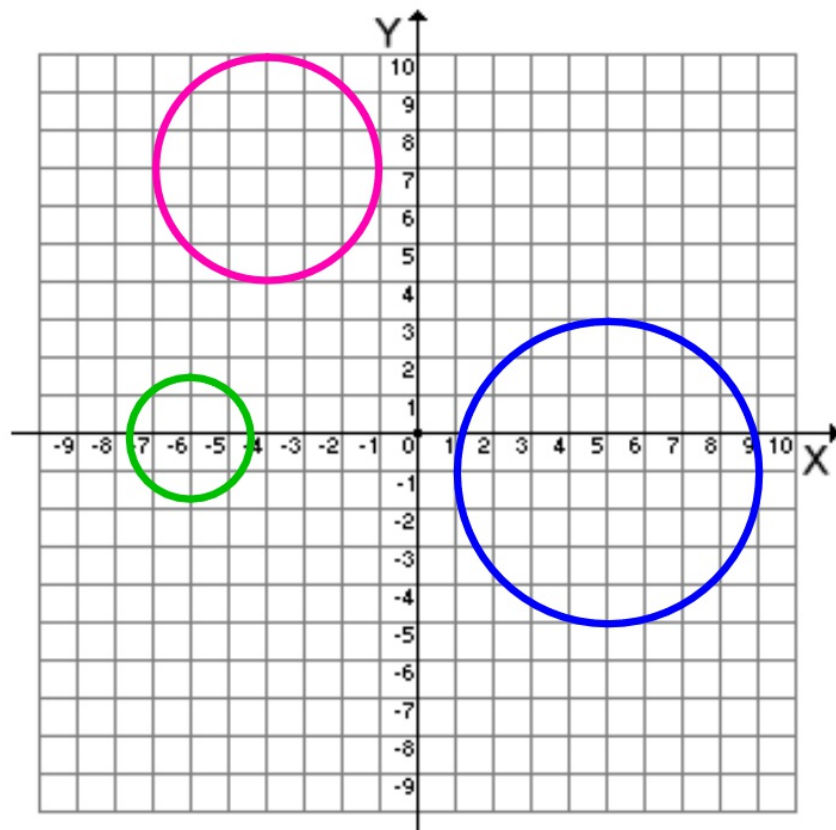
Centered at the origin

Centered anywhere

IWBAT identify the standard equation of a circle centered anywhere on the xy-plane, identify the equation of a circle given its radius, and determine the radius of a circle given the equation.

1.3

Match the equation to the circle.



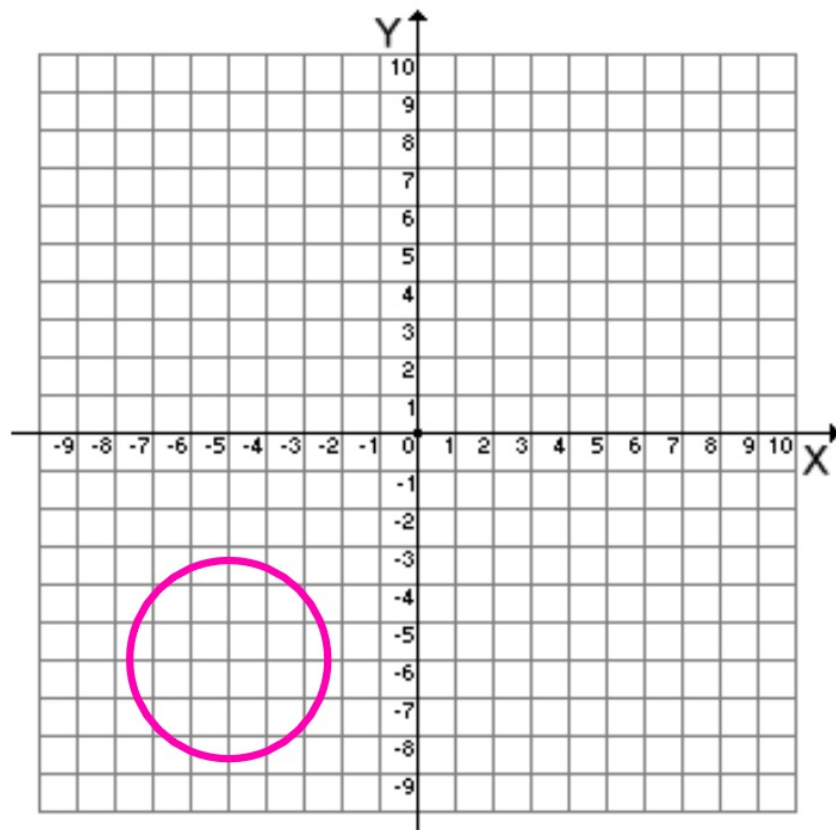
$$2.25 = (x + 6)^2 + y^2$$

$$(x - 5)^2 + (y + 1)^2 = 16$$

$$(x + 4)^2 + (y - 7)^2 = 9$$

IWBAT identify the standard equation of a circle centered anywhere on the xy-plane, identify the equation of a circle given its radius, and determine the radius of a circle given the equation.

1.3



Write the equation for the circle at left.

Draw these circles on the graph above.

$$(x + 1)^2 + (y - 1)^2 = 12.25 \qquad (x - 6)^2 + (y + 2)^2 = 1$$

IWBAT identify the standard equation of a circle centered anywhere on the xy-plane, identify the equation of a circle given its radius, and determine the radius of a circle given the equation.

1.3

Complete quizzes 1.3.3 & 1.3.4.

$$\sqrt{x^2 + y^2}$$

1.6 What are the centers and radii of the following circles?

1/14/14

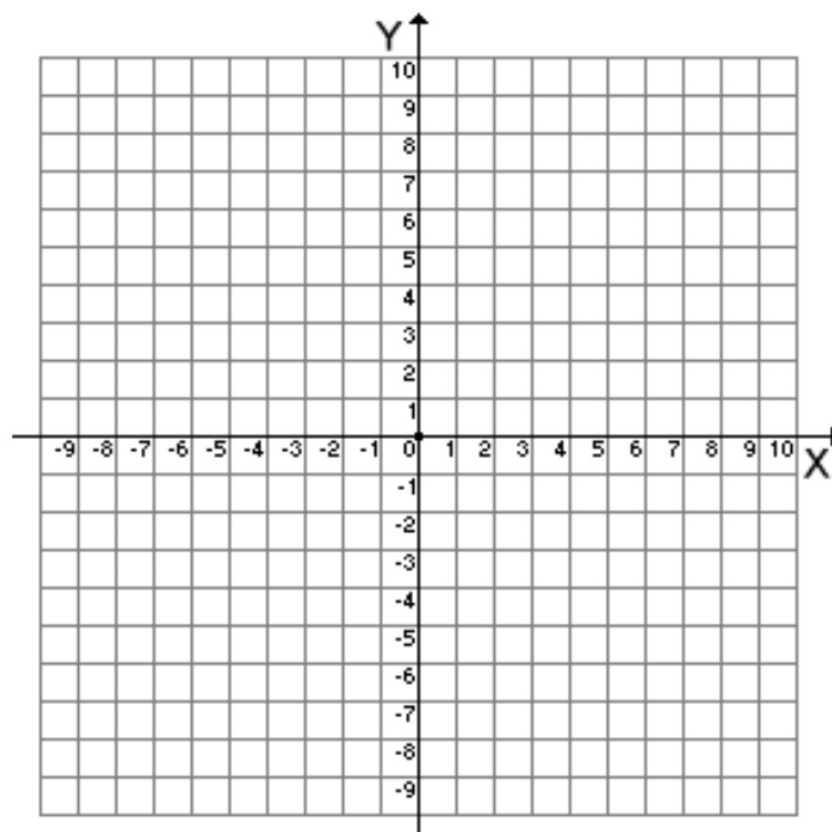
$$a) x^2 + y^2 = 225$$

$$b) x^2 + (y - 3)^2 = 25$$

$$c) (x + 2)^2 + (y - 9)^2 = 169$$

1.6 Identify the relationships between the coefficients of the x- and y-terms in the equation of a parabola and the direction that the parabola opens.

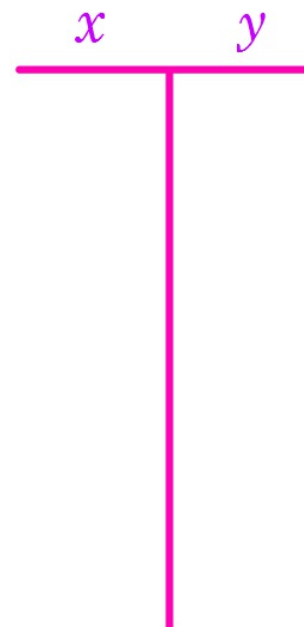
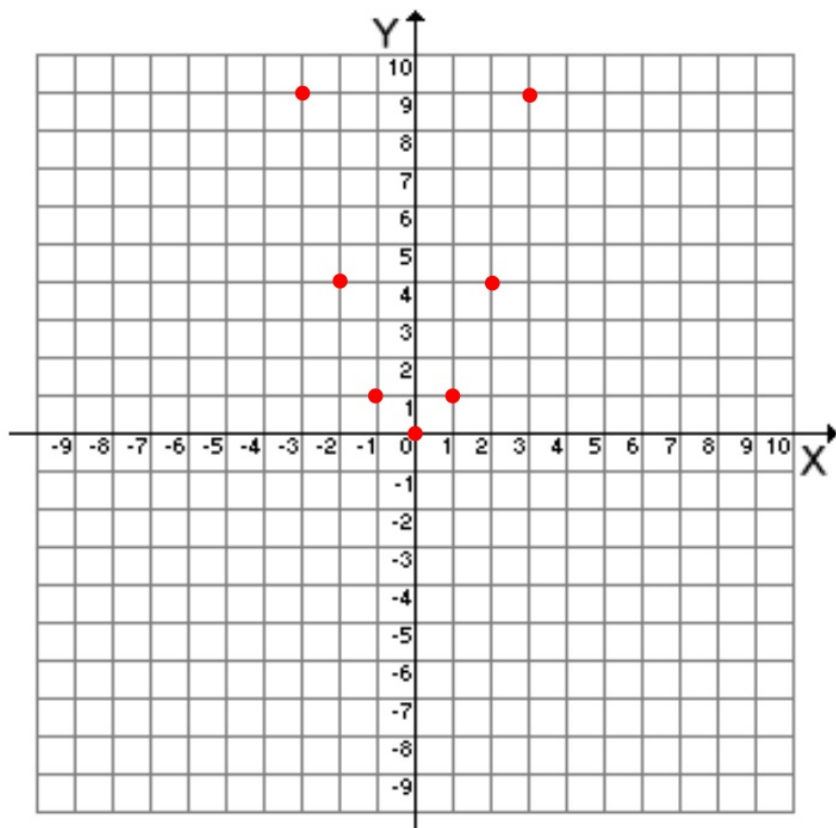
1/14/14



IWBAT identify the standard equations for parabolas that open up, down, right, or left and have their vertex anywhere in the xy-plane. I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

1.6

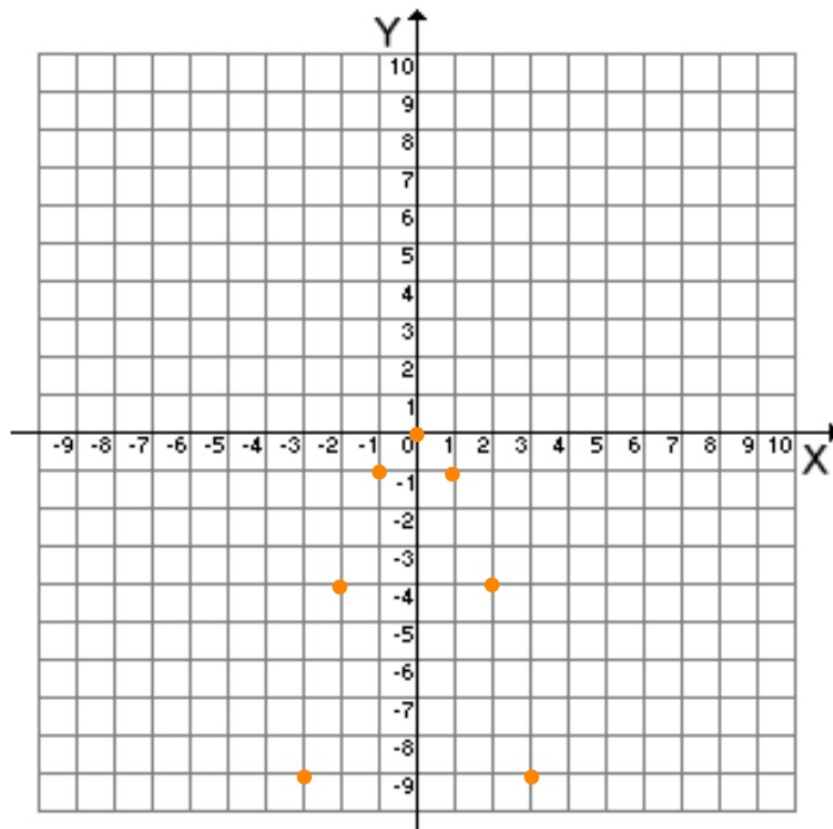
1/14/14



IWBAT identify the standard equations for parabolas that open up, down, right, or left and have their vertex anywhere in the xy-plane.

1.6

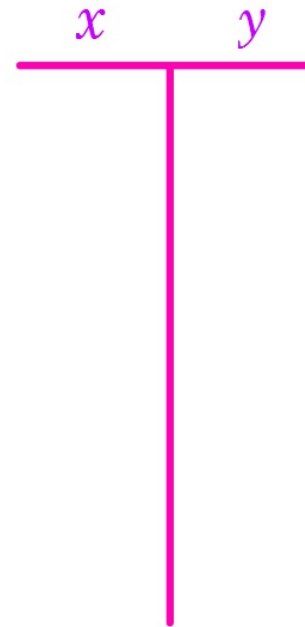
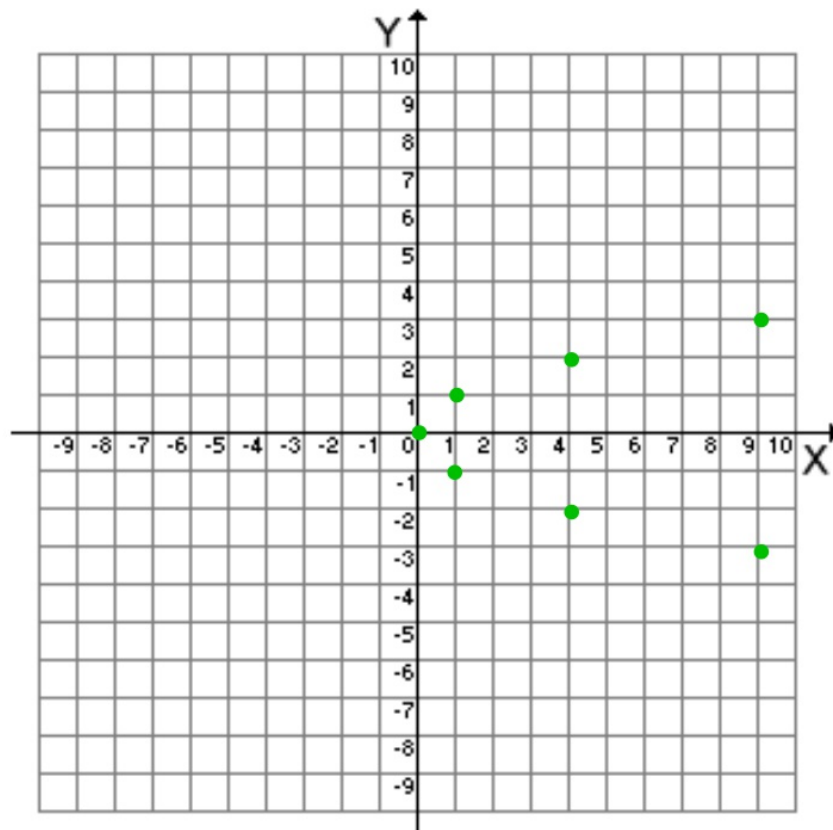
1/14/14



IWBAT identify the standard equations for parabolas that open up, down, right, or left and have their vertex anywhere in the xy-plane.

1.6

1/14/14



IWBAT identify the standard equations for parabolas that open up, down, right, or left and have their vertex anywhere in the xy-plane.

1.6

1/14/14

Parabolas with their
vertex at the origin

Parabolas with their
vertex away from the
origin

IWBAT identify the standard equations for parabolas that open up, down, right, or left and have their vertex anywhere in the xy-plane.

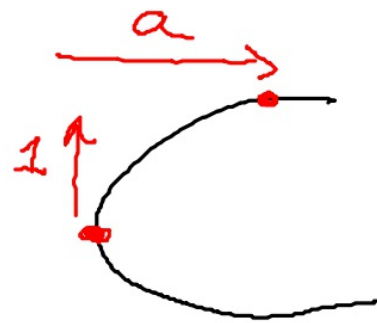
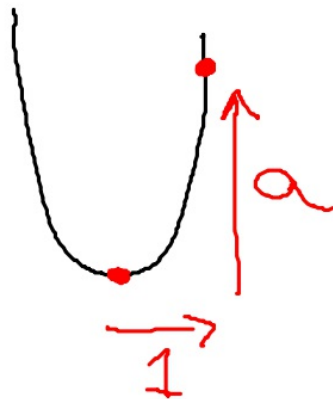
1.6

1/14/14

Complete quizzes 1.6.3 & 1.6.4.

$$y = ax^2 \quad +a \cup -a \cap$$

$$x = ay^2 \quad +a \subset -a \supset$$

finding a 

Write the standard equations of a parabola that opens up and of a parabola that opens to the right.

1/15/14

Unit test

1/15/14

This test is to be done individually. You may use your notes, but not the notes of a neighbor without express permission from Mr. M. You have until the end of the class period to complete the unit test.

$$y = a(x - h)^2 + v \quad (x - h)^2 + (y - v)^2 = r^2$$

